UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,046	07/25/2003	Daniel D. Poblete	7784000305DV	3788

27572 7590 04/26/2004

HARNESS, DICKEY & PIERCE, P.L.C.
P.O. BOX 828
BLOOMFIELD HILLS, MI 48303

EXAMINER	
ROGERS, DAVID A	

ART UNIT	PAPER NUMBER
2856	

DATE MAILED: 04/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/627,046	POBLETE, DANIEL D.	
	Examiner	Art Unit	
	David A. Rogers	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 March 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *4 and 12* is/are allowed.

6)☒ Claim(s) *1-3,5-11 and 13-15* is/are rejected.

7)☒ Claim(s) *1,4,6,10 and 12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *20030725*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The USPTO is in the process of moving to new office spaces in Alexandria, Virginia. Please note the new phone numbers for the examiner and the examiner's supervisor below.

2. This application has been scanned into electronic format. A review of the scanned images indicates that the second page of the applicant's IDS dated 25 July 2003 was not scanned. An initial/signed copy of the IDS is being sent as part of this action so that the record within the Patent Office is complete.

Response to Arguments

3. Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

4. Claims 1, 4, 6, and 10 are objected to because of the following informality. These claims are each directed to vacuum testing a cable. It is recommended that the preamble of the claims be rewritten as follows:

> 1. A method for vacuum testing a cable that is run through an opening in a fuselage of an aircraft, the opening extending from the interior of the aircraft to an exterior of the aircraft, the method comprising the steps of:
>
> (a)...
>
> 4. A method for vacuum testing a cable that is run through an opening in a fuselage of an aircraft, the opening extending from the interior of the aircraft to an exterior of the aircraft, the method comprising the steps of:
>
> (a)...

6. A method for vacuum testing a cable that is run through an opening in a fuselage of an aircraft, the opening extending from the interior of the aircraft to an exterior of the aircraft, the method comprising the steps of:

(a)...

10. A method for vacuum testing a cable that is run through a conduit in a fuselage of an aircraft, the opening extending from the interior of the aircraft to an exterior of the aircraft, the method comprising the steps of:

(a)...

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-3, 5-11, and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent 5,596,176 to Everitt in view of United States Patent 2,694,924 to Matlock *et al.* and United States Patent 5,703,279 to Igura *et al.*

Everitt teaches that it is known to pass a wire (reference item 61) through a gland housing member (reference item 10). The gland housing is a single, integral piece that is used to pass the wire through a bulkhead. Everitt further teaches that the wire is generally provided with a plurality of sealing means within the gland housing member such as a membrane (reference item

12) and a sealing compound that fills a space (reference item 13). The device can further comprise an integral, single-piece bypass tube (reference item 22) for passing wires through the bulkhead after the sealing compound is applied. The sealing compound, therefore, forms a first seal between the gland housing and the bypass tube. The bypass tube, i.e. a wire guide member, is provided with a plug (reference item 23) to seal the tube until it is used. Everitt also teaches that the tube itself can be sealed by injection of a sealing compound within the tube itself. When the need exists a wire can be passed through the bulkhead via the bypass tube after removing the plug. After passing the wire through the bypass tube it would be obvious and with the scope of the use of the device of Everitt to ensure that the interior of the bypass tube was resealed in order to maintain the watertight/airtight condition.

Everitt, therefore, clearly indicates that a) it is desired to form a sealed wire pass-through apparatus with an unused, temporarily sealed guide member and b) it is desired, at a later period, to pass a wire through the guide member and then to reseal the guide member. Furthermore, since Everitt is clearly directed to ensuring a watertight seal through the gland member housing, one of ordinary skill in the art would know or otherwise be inclined to test the device to ensure that leaks do not exist. This is especially true since Everitt discloses that the particular wire sealing apparatus is to be used as a bulkhead passthrough device in aircraft. There are many cases where aircraft bulkheads are pressure bulkheads between the interior of the pressurized aircraft and a portion of the aircraft that is not pressurized or is otherwise

exposed to outside ambient conditions. For example, the forward pressure bulkhead of a United States Navy P-3 Orion supports the forward radar and is generally surrounded by the radome in an unpressurized environment. This forward pressure bulkhead has several through holes to allow the forward radar, among other items, to be in electrical communication with the flight avionics inside the pressurized aircraft. Therefore, the particular wire attachment device of Everitt would be beneficial to ensuring that the pressure seal is not compromised.

Everitt, however, does not expressly disclose applying a vacuum to the structure. Matlock *et al.* teaches the leak testing of a panel/skin structure from an aircraft. The apparatus comprises an concave outer housing (reference item 13) with a pressure gauge (reference item 20), a connector (reference item 18) attached to a vacuum source, and a peripheral seal (reference item 14). In use the concave housing is placed on the panel and its interior evacuated using the vacuum source. A valve (reference item 19) is used in conjunction with the vacuum source to obtain a predetermined pressure as indicated by the pressure gauge. The concave outer surface would be preferred as it could accommodate items installed on the bulkhead that project from the surface of the bulkhead, e.g. bolts, screws, housings, etc.

Everitt in view of Matlock *et al.* does not expressly teach a method to vacuum test where, once the predetermined vacuum pressure is obtained, the gauge is read after a predetermined period of time to provide an indication of a leak. It is noted, however, that should a leak be present in the panel structure,

it will be indicated by a loss of vacuum pressure as indicated by the gauge.

Igura *et al.* teaches that it is known to perform vacuum testing of a structure with wires that pass-through. In use, Igura *et al.* teaches (emphasis added) (column 3, lines 1-13):

> According to another aspect of this invention, there is provided an apparatus for checking a waterproof connector for waterproofness, comprising: a waterproofness checking jig provided with a connector-holding block for engaging and holding in a watertight manner a fitting side of the connector with a mating connector; means for depressurizing an interior of the connector through the connector-holding block and means for holding the interior of the connector in the depressurized state; *means for detecting a pressure inside the connector a certain period of time after commencement of holding in the depressurized state and comparing the same with a reference pressure preset to determine presence or non-presence of leakage; and means for displaying the detected pressure inside the connector and the presence or non-presence of leakage*.

Clearly it is known in vacuum testing to determine if a leak is present by monitoring the vacuum after a predetermined amount of time. See also the cited prior art at the end of this action.

With regard to claim 2, it would have been obvious and more than likely required to test the connector with the sealed bypass tube prior to inserting the wire. The gland housing and its bypass tube allow for the insertion of a wire at a later point in time after the initial installation onto the bulkhead of the aircraft, which could be days, weeks, months, or even years after initial installation. Clearly the gland housing and the wire guide would have been tested prior to use in-flight so as to avoid potential loss of the pressure seal, which could be detrimental if it failed in-flight.

With regard to claims 8, 9, and 15 Everitt does not expressly teach the use of a wire that has specific dimensions, such as being less than 0.5 inches (claim 15), greater than about 0.5 inches (claim 9), or the wire being used for a specific purpose. Wire diameters and types vary in aircraft installations, and can be comprise of single wire or multi-wire bundles. The specific type of wire needed for connection to an avionics device is purely a function of the avionics device, such as a radar or antenna. Therefore, the device of Everitt could easily be modified by one of ordinary skill in the art to accommodate the wires of a preferred size and type. See *In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955)[1]. See also *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976)[2] and *In Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984)[3].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Everitt with the teachings of Matlock *et al.* and Igura *et al.* in order to perform leak testing of a cable that is passed through a wire guide on a bulkhead of an aircraft. Doing so would allow the seal of the wire guide to be easily verified prior to any additional testing or installation of the system to which the wire is to be connected.

---

[1] Claims directed to a lumber package "of appreciable size and weight requiring handling by a lift truck" where held unpatentable over prior art lumber packages which could be lifted by hand because limitations relating to the size of the package were not sufficient to patentably distinguish over the prior art.

[2] Mere scaling up of a prior art process capable of being scaled up, if such were the case, would not establish patentability in a claim to an old process so scaled.

[3] The Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

Allowable Subject Matter

7. Claims 4 and 12 are allowed (subject to the objections noted above).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. United States Patent 6,564,617 to Araki

Araki teaches that it is known to perform leak testing on wires that pass through a sealing means. In Akari, a wire (reference item W) passes through a grommet (reference item 1) at a sub-insertion point (reference item 4). The grommet acts as a sealing means for the wire to protect from the intrusion of water. An elongated tube (reference item 23) is placed against the grommet to generally surround the sub-insertion point as in figure 5. The device pressurizes the space in the tube that generally surrounds the wire. The pressurization creates a differential pressure between the first side of the grommet and the second side of the grommet. The pressurization is maintained and is indicated on a pressure gauge (reference item 42d). If, after a period of time, there is no leak, the judging section (reference item 43) will provide a pass indication (reference item 43a). If, after a predetermined time, there is a leak, the judging section will provide a fail indication (reference item 43b).

b. United States Patent 4,002,055 to Kops

Kops teaches a concave housing (reference item 1) for vacuum testing seam joints.

c. United States Patent 5,372,031 to Harmand

Harmand teaches an apparatus for vacuum testing a closed system. The device comprises a vacuum gauge (reference item 10), a vacuum pump (reference item 4), and mounting plates (reference item 20) with resilient seals (reference item 18). Harmand teaches that the apparatus creates a vacuum in the closed system, and then the gauge is observed for changes that would be indicative of a leak.

d. United States Patent 4,534,208 to Macin *et al.*

Macin *et al.* teaches an apparatus for vacuum testing a sealed container. The apparatus comprises a vacuum pump (reference item 28), a vacuum gauge (reference item 30), and a connector (reference item 32) for coupling with the sealed system. In use the vacuum pump is operated to create a vacuum in the sealed system. The vacuum gauge is monitored over time for changes that would be indicative of a leak.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on

the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A. Rogers whose telephone number is (571) 272-2205. The examiner can normally be reached on Monday - Friday (0730 - 1600).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron E. Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

dar
April 19, 2004